

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently amended): A continuous process for polymer formation ~~by continuous free-radical homogeneous solution polymerization, or melt polymerization,~~ of at least one (meth)acrylate monomer mixture, comprising:

feeding ~~[[the]]~~ an at least one monomer mixture into ~~[[the]]~~ a bottom lower third of a vertically arranged tubular reactor,

polymerizing the at least one monomer by heating the at least one monomer mixture to reaction temperature in the presence of ~~[[an]]~~ at least one free radical initiator ~~or initiator mixture~~ to form a monomer-initiator polymerization mixture,

moving the monomer-initiator polymerization mixture through the vertical tubular reactor at a longitudinal linear velocity of from 0.1 to 50 cm/sec,

stirring the monomer-initiator polymerization mixture at from 5 to 50 rpm by a stirrer while moving through the vertical tubular reactor,

controlling the polymerization mixture temperature while moving through the vertical tubular reactor,

forming a polymer mixture, and

discharging the polymer mixture at the top from an upper third of the vertical tubular reactor;

wherein

a ratio of an internal diameter of the vertical tubular reactor to a diameter of the stirrer is in a range from 1.10 to 1.90,

the at least one monomer mixture comprises a (meth)acrylate monomer, and

the polymerizing is either bulk free-radical homogeneous solution polymerization, or bulk free-radical melt polymerization.

Claim 2 (Currently amended): The process according to Claim 1, wherein the ~~polymerization mixture temperature of the reactor is such that the mixtures and the polymer in the reactor are always~~ is controlled to maintain the polymerization mixture as a liquid.

Claim 3 (Currently amended): The process according to Claim 1, wherein the at least one free radical initiator or initiator mixture is introduced within the lower third of the vertically arranged tubular reactor.

Claim 4 (Currently amended): The process according to Claim 1, wherein the at least one monomer mixture is preheated prior to feeding to the vertical reactor.

Claim 5 (Previously presented): The process according to Claim 1, wherein the process is carried out without solvent.

Claim 6 (Currently amended): The process according to Claim 1, ~~[[,]] wherein the forming a polymer takes place~~ further comprising introducing the discharged polymer mixture to a final polymerization in a downstream tubular reactor or stirred tank cascades.

Claim 7 (Previously presented): The process according to Claim 1, wherein further processing of the polymer takes place directly in a downstream processing apparatus.

Claim 8 (Previously presented): The process according to Claim 1, wherein the at least one monomer mixture comprises two or more monomer mixtures of different composition.

Claim 9 (Currently amended): The process according to Claim 8, wherein the two or more monomer mixtures each comprise one or more monomers, a regulator or regulator mixture, at least one auxiliary, at least one additive and the at least one initiator ~~or initiator mixture~~.

Claim 10 (Currently amended): The process according to Claim 8, comprising two monomer mixtures, wherein one mixture comprises one or more monomers, the initiator or initiator mixture, at least one auxiliary and ~~[[and]]~~ at least one additive, and  
wherein the other mixture comprises one or more monomers, the regulator or regulator mixture, at least one auxiliary and at least one additive.

Claim 11 (Currently amended): A polymer prepared by the process of Claim 1,  
wherein

the process is a melt polymerization process, ~~wherein~~ and  
the polymer has a glass transition temperature  $\leq 70^{\circ}\text{C}$ .

Claim 12 (Currently amended): A tubular reactor for the process of claim 1, arranged vertically, comprising:

starting material introduction in the lower third of the reactor, and

~~comprising~~ product take-off in the upper third of the reactor,

wherein

the reactor comprises reactor zones, ~~wherein the reactor zones~~ which can be heated separately, ~~and wherein~~

a centrally arranged stirrer unit operates at rotation rates of from 5 to 50 rpm, and

a ratio of an internal diameter of the vertical tubular reactor to a diameter of the stirrer  
in the range from 1.10 to 1.90.

Claim 13 (Previously presented): A polymer formed by the process of Claim 1.

Claim 14 (Previously presented): A method of forming a viscosity index improver, comprising, forming the viscosity index improver with the polymer of Claim 13.

Claim 15 (Previously presented): A method of making a setting-point improver comprising forming the setting-point improver with the polymer of Claim 13.

Claim 16 (Previously presented): A method of forming a lacquer, comprising forming the lacquer with the polymer of Claim 13.

Claim 17 (Previously presented): A method of making a hot-melt adhesive, comprising forming the hot-melt adhesive with the polymer of Claim 13.

Claim 18 (Previously presented): The process of Claim 1, wherein the process is a melt polymerization process.

Claim 19 (Canceled).

Claim 20 (Currently amended): A polymer formed by the process of Claim [[2]] 6.